



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232

Refer to NMFS No: WCRO-2019-00175

November 20, 2019

Hanh Shaw
Water Quality Standards Unit Manager
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 155
Seattle, Washington 98101


Re: Erratum for the Endangered Species Act Section 7(a)(2) Biological Opinion, and
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat
Response for the U.S. Environmental Protection Agency Proposed Approval of the Snake
River Hells Canyon Site Specific Temperature Criterion

Dear Ms. Shaw:

On November 12, 2019, NOAA's National Marine Fisheries Service (NMFS) received an inquiry from your staff regarding information portrayed in Table 8 of the above-referenced biological opinion (Opinion). Upon review, we realized there were errors in the table footnote as well as in the last two rows. We have corrected those errors and are providing you with this erratum. Our evaluation of the total percent of redds impacted at the scale of the action area (i.e., 8 percent) and at the scale of the evolutionarily significant unit (i.e., 3.4 percent average) remains as described in the Opinion. That evaluation was based on the correct estimates of average percent mortality rather than the estimates presented in Table 8 of the original Opinion transmitted to the U.S. Environmental Protection Agency on September 25, 2019. As such, we have concluded these errors are non-substantive and do not warrant a reinitiation evaluation.

The erratum page is enclosed with this letter. The cells containing corrected information are shaded gray. If you have any questions regarding the erratum, please contact Johnna Sandow, Southern Snake Branch, Boise, Idaho 208-378-5737 or johnna.sandow@noaa.gov.

Sincerely,

for 

Michael P. Tehan
Assistant Regional Administrator
Interior Columbia Basin Office



Enclosure

cc: M. A. Nelson – IDEQ
K. Hendricks – USFWS
M. Lopez – NPT
C. Colter – SBT
J. Seo – SPT
S. Crutcher – SPT

Erratum

Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the U.S. Environmental Protection Agency Proposed Approval of the Snake River Hells Canyon Site Specific Temperature Criterion

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However, rather than attempting to quantify the difference in effect between the proposed criterion and the existing criterion, we have assumed that all of the calculated effects are entirely reflective of the proposed action. This is a conservative approach and effects of the proposed action are likely less than what we have estimated here. Stream temperatures used for this analysis included the average of the daily maximum temperatures observed at four and six monitoring stations in the lower and upper reaches, respectively. Our results here are different from those presented in Conner (2015) due to the maximum temperature data used.

Table 1. Estimated annual proportion of redds counted for specified maximum daily temperature intervals and the associated estimates of average percent mortality.

| Year | Upper Reach: % of Total Redd Counts | | | Lower Reach: % of Total Redd Counts | | |
|--|-------------------------------------|-------------|-------------|-------------------------------------|-------------|-------------|
| | ≥17°C | 16.5–16.9°C | 14.5–16.4°C | 17°C | 16.5–16.9°C | 14.5–16.4°C |
| 2010 | 1.3 | 0.9 | 50.9 | 0 | 0 | 3.0 |
| 2011 | 0.6 | 0.6 | 33.9 | 0 | 0 | 1.1 |
| 2012 | 0.7 | 0.5 | 55.1 | 0 | 0 | 4.6 |
| 2013 | 0.6 | 1.2 | 44.4 | 0 | 0 | 0.6 |
| 2014 | 26.0 | 9.9 | 47.5 | 0.3 | 0.3 | 14 |
| 2015 | 42.4 | 15.0 | 35.2 | 3.9 | 3.9 | 29.1 |
| 2016 | 0 | 7.3 | 69.3 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 26.8 | 0 | 0 | 0 |
| Average % of Redds Counted | 8.9 | 4.4 | 45.4 | 0.5 | 0.5 | 6.5 |
| Estimated Average % Mortality ¹ | 8.8 | 1 | 2.9 | 0.5 | 0.1 | 0.4 |

¹Average percent mortality estimates were calculated by multiplying the reported percent mortalities associated with each thermal regime by the average percent of redds constructed for each thermal regime. The percent mortality associated with each thermal regime is as follows: ≥17°C (98 percent mortality estimate [Geist et al. 2006]); 16.5–16.9°C (23.6 percent mortality estimate [Olson et al. 1970]); and 14.5–16.4 (6.4 percent mortality estimate [Olson et al. 1970]).

Overall, when considering the proportion of redds that the upper and lower reaches contribute to the total redds within the action area, the proposed action could potentially impact an average of 40 percent of the redds constructed within the action area. Meaning, on average, based on data collected since 2010, an average of 40 percent of the redds were constructed when stream temperatures were above 14.5°C. Because different effects thresholds were utilized for the three assigned thermal regimes, estimates of percent mortality had to first be calculated for each thermal regime and year pairing in order to calculate an overall estimate of mortality. Ultimately, NMFS estimates that the proposed action could result in the loss of up to 8 percent of the redds in the mainstem Snake River based on past spawn timing. As described above, we have conservatively assumed this impact is relative to what may occur if the existing temperature criterion was achieved. Between 2010–2017, the proportion of redds in the action area comprised an average of 42 percent (ranging between 31–57 percent) of the total ESU redds. As such, the proposed action could result in the loss of an average of 3.4 percent of the ESU redds (ranging between 2.5–4.6 percent).

As described in the previous section, density dependent mechanisms are occurring at the spawning and rearing life stages. NMFS (2017a) developed a spawner-recruit relationship for Snake River fall Chinook using the Beverton Holt model. The model-fitting and selection process is described in the recently published Snake River fall Chinook Recovery Plan (NMFS 2017a). The relationship is density-dependent, meaning, that as you increase the number of

